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The Influence of Self-Regulated Learning, Adversity Quotient, Self-Efficacy, and Learning Motivation on Academic Achievement

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Abstract

This ex-post facto quantitative study seeks to analyze the influence of Self-Regulated Learning, Adversity Quotient, Self-Efficacy, and Learning Motivation on the Academic Achievement of 8th-grade students at MTs Madani Alauddin, utilizing the complete population of 8th-grade students at the institution. This research employed cluster random sampling, yielding a sample size of 105 people. The questionnaire was employed to gather data on Self-Regulated Learning, Adversity Quotient, Self-Efficacy, and Learning Motivation among 8th-grade students at MTs Madani Alauddin. The research data were examined using descriptive and inferential statistics through Partial Least Squares Structural Equation Modeling (SEM-PLS). The research findings indicate that self-regulated learning exerts both direct and indirect influences on academic accomplishment, with the direct influence being more significant than the indirect influence. The adversity quotient exerts both direct and indirect effects on academic achievement, with the direct effect being more pronounced than the indirect effect. Self-efficacy exerts both direct and indirect effects on academic accomplishment, with the direct effect being more pronounced than the indirect effect. The urge to learn directly influences academic performance.

Keywords: Self-Regulated Learning, Adversity Quotient, Self-Efficacy, Learning Motivation, Academic Achievement, Structural Equation Modeling, Partial Least Square.

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INTRODUCTION

Mathematics is a mandatory subject taught from the elementary level to higher education. Winata & Friantini (2019) Mathematics is a subject that can enhance observation and reflection skills, provide assistance to students in considering and communicating, and encourage students to think logically. However, the mathematics learning achievements of students in Indonesia are still relatively low. This is based on data from the OECD Education GPS website that Indonesian students' performance in the 2022 PISA test was below the OECD average, with an average score of 366 points in mathematics, compared to the OECD average of 472 points. (OECD, 2024). The TIMSS 2019 survey also shows that Indonesia, with participation from 50 countries, is still ranked 47th with a score of 397, indicating a significant gap from the international average score of 500 (Mullis et al., 2020). Various internal and external factors can affect academic achievement. Sudjana (2014) Argues that internal factors contribute more significantly to learning success than external factors. Based on that statement, this study explores the influence of several internal variables on mathematics learning achievement, namely self-regulated learning, adversity quotient, self-efficacy, and learning motivation.

Self-regulated learning refers to the ability of learners to manage their thoughts, feelings, strategies, and behaviors that will be used to achieve learning goals. Mega et al. (2014) Found that self-regulated learning can positively predict academic achievement. This is supported by research by Abar dan Abar & Loken (2010), Efklides (2011), and Greene & Azevedo (2010), which shows a positive relationship between self-regulated learning and learning achievement. The adversity quotient is a person's ability to face and overcome difficulties and challenges. Research by Setyobudi et al. (2023) Shows that learners with high learning AQ can overcome the obstacles and remain motivated to achieve their academic goals. Safi'i et al. (2021) Stated that learners need an adversity quotient to successfully face their problems and complete their tasks and responsibilities in learning.

An individual who is confident in achieving goals or completing tasks has self-efficacy. According to Bandura (1977) Self-efficacy is an individual's belief in his or her ability to organize and carry out actions that will achieve the desired outcome. Khoirunnisa et al. (2019) Found that students with high self-efficacy feel confident in facing academic obstacles, which impacts their learning achievement.

Learning motivation is the motivation that encourages students to learn and achieve academic achievement. Andriani & Rasto (2019) Stated that motivated students tend to have clear goals and try hard to achieve them. Heriyati (2017) Learning motivation is students' attitudes toward acquiring knowledge, skills, and understanding after following the learning flow with a tendency to be unconscious or conscious. Based on theory, this study investigates the impact of independent learning, difficulty quotient, and self-efficacy on students' academic achievement, with learning motivation as an intermediate variable. This study is critical to improving understanding of the internal elements that affect the achievement of students' learning achievements so that it becomes the basis for developing more effective learning strategies. This study will evaluate several hypotheses: (1) Self-Regulated Learning directly affects learning achievement; (2) Adversity Quotient directly affects learning achievement; (3) Self-Efficacy directly affects learning achievement; (4) learning motivation directly affects learning achievement; (5) Self-Regulated Learning indirectly affects learning achievement through learning motivation; (6) Adversity Quotient indirectly affects learning achievement through learning motivation; and (7) Self-Efficacy indirectly affects learning achievement through learning motivation. It is optimistic that the findings of this study will result in theoretical and practical advances in mathematics teaching. This study could potentially improve the literature on the factors that affect mathematics learning achievement in practice.

METHODS

This study implements an ex-post facto quantitative approach to determine the cause-and-effect relationship between the variables studied. Because the existing phenomenon is occurring naturally, the researcher did not treat the independent variable specifically. The implementation of this research coincides with the even semester of the 2024/2025 academic year at MTs Madani Alauddin in Gowa Regency, South Sulawesi Province. This study involved all students from grade VIII, which totaled 139 students. The Cluster Random Sampling technique was applied to collect the sample, which resulted in 105 respondents from the four available classes. The variables studied were Self-Regulated Learning, Adversity Quotient, Self-Efficacy, Learning Motivation, and Learning Achievement. The research instrument was a questionnaire developed based on theoretical aspects of each variable. Self-Regulated Learning was measured based on aspects of time organization, material elaboration, self-evaluation, study strategies for exams, and

metacognition (Mega et al., 2014). Adversity Quotient was measured using aspects of control, endurance, reach, and origin and ownership according to Stoltz's theory (2000). Self-Efficacy was measured using dimensions of task difficulty level, strength of belief, and generality of experience as described by Bandura (1977). Meanwhile, Learning Motivation was assessed through indicators including the desire to learn, the drive to study, future aspirations, appreciation in learning, and a conducive learning environment (Uno, 2017). Data on learning achievement was obtained from the final mathematics score recorded in the report card. The relationship between variables, direct and indirect influences, was evaluated using descriptive and inferential statistical techniques, namely Structural Equation Modeling (SEM) of the type of Partial Least Squares (PLS). Figure 1 shows the design of the study.

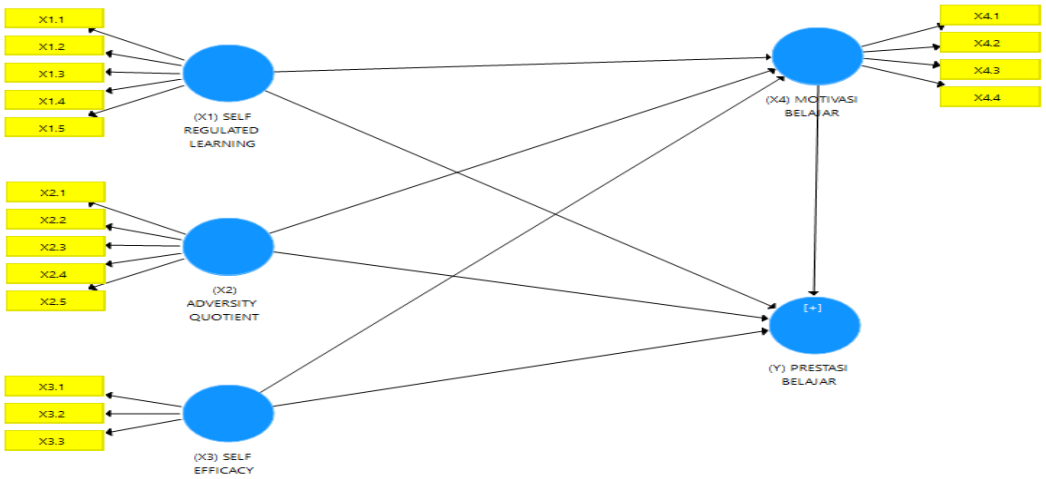

Figure 1. Research Model

RESULTS & DISCUSSION

Results

Statistics Descriptive

The first stage is to find the descriptive statistics for Self-Regulated Learning, Adversity Quotient, Self-Efficacy, Learning Motivation, and Learning Achievement of grade VIII MTs Madani Alauddin students. The following are the results of the descriptive statistical analysis of each variable.

Table 1 Descriptive Statistics

Statistics Descriptive	Self-Regulated Learning	Adversity Quotient	Self-Efficacy	Learning Motivation	Learning Achievement
Minimum	44	87	60	43	81
Maximum	79	142	119	93	92
Mean	62,47	114,94	91,45	72,43	87,41

Standard Deviation	9,034	17,103	14,772	11,945	2,674

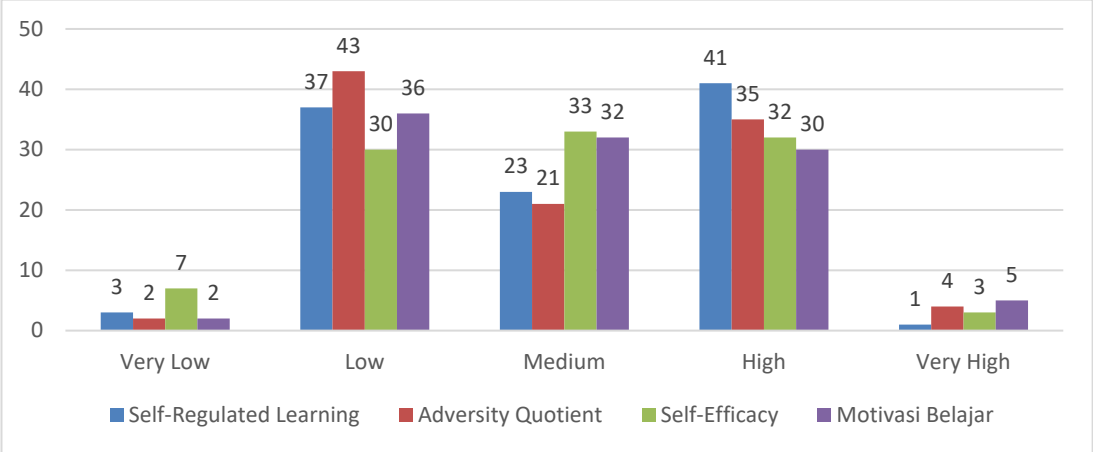

Figure 2. Categorization *of Self-Regulated Learning, Adversity Quotient, Self-Efficacy*, and Learning Motivation

a. Self-Regulated Learning

Table 1 shows that the average self-regulated learning score for grade VIII students at MTs Madani Alauddin is 62.47. The maximum score is 79, the minimum score is 44, and the standard deviation is 9.034. According to Figure 1, it can be concluded that the self-regulated learning of Grade VIII students at MTs Madani Alauddin is mainly classified as low, with 37 students, and high, with 41 students, while the number of students categorized as very low and very high is very few.

b. Adversity Quotient

Table 1 shows that the average Adversity Quotient of grade VIII students at MTs Madani Alauddin is 114.94. The maximum score is 142, the minimum score is 87, and the standard deviation is 17,103. According to Figure 1, the adversity quotient of grade VIII students at MTs Madani Alauddin was mainly classified as low, with 43 students, followed by the high category, with 35 students, while the number of children categorized as very low or very high was very few.

c. Self-Efficacy

Table 1 shows that the average Self-Efficacy of grade VIII students at MTs Madani Alauddin is 91.45. The maximum score is 119, the minimum score is 60, and the standard deviation is 14.772. According to Figure 1, the Adversity Quotient of grade VIII at MTs Madani Alauddin is mainly distributed in the low category, consisting of 30 students, the medium category with 33 students, and the high category with 32 students, while the number of students classified in the very low and very high categories is tiny number.

d. Learning Motivation

Table 1 shows that the average Learning Motivation of Class VIII students at MTs Madani Alauddin is 72.43. The maximum score is 93, the minimum score is 43, and the standard deviation is 72.43. According to Figure 1, the Learning Motivation of grade VIII students at MTs Madani Alauddin is mainly distributed in the low category, consisting of 36 students, followed by the medium category with 32 students, and the high category with

30 students. In contrast, a small number of students are classified in the very low and very high categories.

e. Learning Achievement

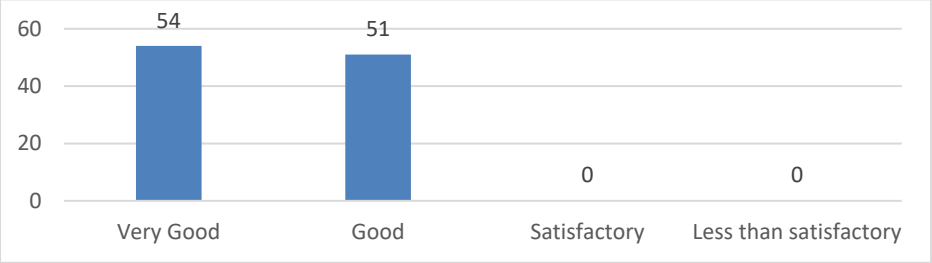

Figure 3. Categorization of Learning Achievement

Table 1 shows that the average academic achievement of grade VIII students at MTs Madani Alauddin is 87.41. The maximum value is 92, the minimum is 81, and the standard deviation is 2.674. According to Figure 3, the Learning Achievement of grade VIII students at MTs Madani Alauddin is categorized as very good for 54 students and good for 51 students.

Inferential Statistics

a. Evaluation of Measurement Models

1) Indicator reliability

Table 2. Outer Loadings

	Self-Regulated Learning	Adversity Quotient	Self-Efficacy	Learning Motivation	Learning Achievement
SRL1	0.856				
SRL2	0.827				
SRL3	0.883				
SRL4	0.800				
SRL5	0.846				
AQ1		0.797			
AQ2		0.796			
AQ3		0.802			
AQ4		0.752			
AQ5		0.801			
SE1			0.779		
SE2			0.839		
SE3			0.824		
MOT1				0.897	
MOT2				0.881	
MOT3				0.807	
MOT4				0.761	

Hair et al. (2021) Outer loading of the model, where this value indicates the reliability of the indicator of each variable. The minimum value of the outer loading is 0.7. When viewed from the analysis results, all indicators of each variable have a value of > 0.7 to be considered to meet the criteria.

2) Internal Reliability

Table 3Cronbach Alpha Value and Composite Reliability

	Alpha Cronbach	Composite Reliability
Self-Regulated Learning	0.898	0.925
Adversity Quotient	0.850	0.892
Self-Efficacy	0.748	0.855
Learning Motivation	0.860	0.904
Learning Achievement	1.000	1.000

Hair et al. (2022) Guide the internal reliability criteria of a good model with an Alpha Cronbach value of > 0.7 and a Composite Reliability of > 0.7. Table 3 shows that the model has good reliability because all variables have an alpha Cronbach value and a composite reliability> 0.7.

3) Convergence Validity

Table 4. AVE Value

	(AVE)
Self-Regulated Learning	0.711
Adversity Quotient	0.623
Self-Efficacy	0.663
Learning Motivation	0.703

Based on Table 4, it can be concluded that all variables in the model are valid convergently. This is in line with the explanation by Hair et al. (2021) The model has good convergent validity if the Average Variance Extracted (AVE) value > 0.5.

4) Discriminant validity

Table 5. HTMT Value

X1	X2	X3	X4	Y
X1				
X2	0.619			
X3	0.714	0.577		
X4	0.642	0.683	0.654	

Based on Table 5, it can be seen that the HTMT value obtained in each variable is in the range of 0.619-0.762, which is smaller than 0.9. This means that all HTMT value criteria are met.

b. Model Structural Evaluation

1) Collinearity

Table 6. VIF Values

	Learning Motivation	Learning Achievement
Self-Regulated Learning	1.794	1.938
Adversity Quotient	1.489	1.730
Self-Efficacy	1.637	1.726
Learning Motivation		1.949

A VIF value greater than 5 will indicate a problem of collinearity between indicators and also multicollinearity between variables (Hair et al., 2021). So, the VIF value must be < 5. Based on Table 6, it can be concluded that there is no collinearity because all variables have a VIF value < 5.

2) Significance and relevance of the model

Table *7*. Path *Coefficient* Values and *P-Values*

Hypothesis	***Path-Coefficient***	***Indirect Effect***	***Total Effect***	***p-Value***	**Information**
Self-Regulated Learning ➔ Learning Motivation	0,272			0.003	Accepted
Adversity Quotient ➔ Learning Motivation	0,352			0.002	Accepted
Self-Efficacy ➔ Learning Motivation	0,214			0.029	Accepted
Self-Regulated Learning ➔ Performance	0,211			0.004	Accepted
Adversity Quotient ➔ of Learning Performance	0,196			0.030	Accepted
Self-Efficacy ➔ Learning Performance	0,179			0.029	Accepted
Learning Motivation ➔Learning Achievement	0,383			0.016	Accepted
Self-Regulated Learning ➔ Motivation➔Learning Achievement		0,104	0,315	0,019	Accepted
Adversity Quotient ➔ Learning Motivation➔Learning Achievement		0,135	0,331	0,008	Accepted
Self-Efficacy ➔ Learning Motivation➔Learning Achievement		0,082	0,261	0,036	Accepted

Table 8. f^2 Value

	Learning Motivation	Learning Achievement
Self-Regulated Learning	0.080	0.065
Adversity Quotient	0.162	0.063
Self-Efficacy	0.054	0.052
Learning Motivation		0.212

Based on Tables 7 and 8, some results can be seen as follows:

a) In the study results, the path coefficient of the effect of Self-Regulated Learning on Learning Achievement obtained from the analysis was 0.211, and the p-value was 0.004. This means that self-regulated learning has a positive and significant direct impact. If there is an increase in self-regulated learning, students' learning achievement will also increase, with valid statistical relationships. However, the f2 value of 0.065 shows that the influence of self-regulated learning on learning achievement is still relatively low. This means that although the relationship between these two variables is statistically significant, the real contribution of self-regulated learning to learning achievement is not very large. Based on these results. In the context of research and theory, these findings support Zimmerman (2000), who states that self-regulated learning is an active process in which individuals set their learning goals, monitor progress, and adjust their strategies to achieve optimal outcomes. This process helps students develop a sense of responsibility for their learning, ultimately improving academic outcomes. Moreover, Pintrich (2004) Self-regulated learning is an essential learning strategy to support student performance, especially in an environment that demands independent learning. Thus, these results underscore the importance of instilling self-regulated learning skills among students. The practical implication is the importance of designing learning programs that support student independence, such as using learning aids that involve goal setting, reflection, and self-supervision. With this support, students' learning achievement can be improved significantly.
b) The adversity quotient has a positive and significant direct relationship with learning achievement, as shown by the path coefficient value of 0.196 and the p-value of 0.030. This indicates that the higher a person's ability to face and overcome difficulties (adversity quotient), the higher his learning achievement tends to be. This relationship is statistically valid, although the path coefficient shows that the direct effect of the adversity quotient on learning achievement is moderate. In addition, the f^2 value of 0.063 indicates that the substantive contribution of the adversity quotient to learning achievement falls into the small category, so although significant, the real influence exerted on learning achievement is not too large. These findings are in line with the theory put forward by Stoltz (2000) The adversity quotient is one of the essential indicators that affect the success of individuals in various aspects of life, including academics. Other research, such as that conducted by Hardianto & Sucihayati (2019), Also revealed that students with high adversity quotients tend to have better adaptability, contributing to improved learning achievement. Based on these results, it is necessary to consider additional factors, such as learning strategies or environmental support, that can serve as moderators to increase the influence of the adversity quotient more significantly on learning achievement.
c) Self-efficacy has a positive and significant direct relationship with learning achievement, as evidenced by a path coefficient value of 0.179 and a p-value of 0.029. This score shows that the higher the students' confidence in completing tasks or achieving goals (self-efficacy), the higher their learning achievement tends to increase significantly. However, the substantive effect of self-efficacy on learning achievement, as reflected by the f^2 value of 0.052, is relatively small. This means that although the relationship is statistically significant, the real contribution of self-efficacy to learning achievement is relatively limited. These results are consistent with Bandura (1977), which states that self-efficacy is essential in influencing individual behavior and learning outcomes. Students' confidence in their abilities can motivate them to try harder, endure challenges, and achieve learning goals. Research by Schunk (1995) also supports the idea that self-efficacy impacts academic motivation and performance.

However, other variables often influence the effect, such as learning strategies and learning environment.

d) Learning motivation has a positive and significant direct relationship with learning achievement, as shown by the path coefficient value of 0.383 and the p-value of 0.016. These results show that increased student motivation to learn significantly contributes to increased academic achievement. This relationship is statistically valid with a relatively strong pathway coefficient, showing that learning motivation is essential in supporting student success. In addition, the f^2 value of 0.212 indicates that the substantive influence of learning motivation on learning achievement falls into the moderate category, which means that learning motivation has a real impact on improving student achievement. These findings support the theory put forward by Ryan & Deci (2000) In Self-Determination Theory, explains that intrinsic and extrinsic motivation are the main factors that drive individuals to achieve their learning goals. Another research by Schunk (1991) Also shows that learning motivation not only has an impact on improving academic performance but also on students' confidence in overcoming academic challenges. With a large f^2 value, learning motivation can be considered one of the crucial factors in supporting learning achievement.
e) Self-regulated learning has a positive and significant direct relationship with learning motivation, as shown by a path coefficient value of 0.272 and a p-value of 0.003. These results suggest that students' ability to manage their learning independently significantly contributes to their increased learning motivation. This relationship is statistically valid, although the path coefficient value shows a moderate influence. In addition, an f^2 value of 0.080 indicates that the substantive impact of self-regulated learning on learning motivation is in the small category. This means that, while this relationship is statistically significant, the real contribution of self-regulated learning to learning motivation is not very large overall. These findings support Zimmerman's theory (2000), which states that self-regulated learning is an active process in which students set goals, monitor their progress, and adjust their strategies to achieve optimal results outcomes. This process affects students' intrinsic motivation as they feel they have control over their learning. Moreover, Pintrich (2004) mentioned that self-regulated learning increases students' independence and helps them survive in the face of learning challenges so that overall learning motivation can grow.
f) The adversity quotient has a positive and significant direct relationship with learning motivation, as shown by a path coefficient value of 0.352 and a p-value of 0.002. This indicates that the higher the student's ability to face and overcome difficulties (adversity quotient), the greater the motivation to learn. This relationship is statistically valid and relatively strong, indicating that adversity is essential in driving learning motivation. In addition, an f^2 value of 0.162 indicates that the substantive effect of the adversity quotient on learning motivation falls into the moderate category, which means that its contribution to increasing learning motivation is quite significant. These results support the theory by Stoltz (2000), Which states that the adversity quotient is the ability of individuals to survive and rise from difficulties, which significantly influences a person's success, including in learning. In education, these findings indicate the importance of helping students develop an adversity quotient through training, simulations, or learning activities that encourage resilience and independence.
g) Self-efficacy has a positive and significant direct relationship with learning motivation, as shown by the path coefficient value of 0.214 and the p-value of 0.029. This indicates that the higher the confidence of students in their ability to manage and complete academic tasks, the higher their motivation to learn. This relationship is statistically valid, although the value of the path coefficient shows a moderate influence. An f^2 value of 0.054 indicates that the substantive contribution of self-efficacy to learning

motivation falls into the small category, so although the effect is real, it is still quite limited overall. These results are consistent with the theory by Bandura (1977), which states that self-efficacy plays an important role in individual motivation. Students with high self-efficacy tend to be more confident, motivated, and persistent in the face of learning challenges because they are confident in their ability to succeed. In addition, the research by Schunk and Pajares (2002) shows that self-efficacy can affect learning motivation through increased persistence and the use of effective learning strategies. Based on these findings, teachers and educators need to support the development of student self-efficacy through positive feedback, realistic goal setting, and reinforcement of small successes that can boost student confidence.

h) Self-regulated learning has an indirect influence on learning achievement through learning motivation as an intervening variable, as shown by an indirect effect value of 0.104 and a p-value of 0.019. This value shows that these indirect influences are statistically significant, which means that self-regulated learning can improve student learning achievement through increased learning motivation. In addition, a total effect value of 0.315 indicates that self-regulated learning has an overall moderate contribution to learning achievement, both directly and through learning motivation. These findings are in line with the theory by Zimmerman (2002), which states that self-regulated learning not only has a direct impact on academic outcomes but also plays an important role in increasing students' intrinsic motivation. Learning motivation acts as a mechanism that helps students direct their efforts and overcome obstacles, thereby strengthening the relationship between self-regulated learning and learning achievement. Research by Pintrich (2004) Also shows that self-regulated learning can improve academic performance indirectly by developing students' commitment to their learning goals through learning motivation. Thus, these results confirm the importance of integrating self-regulated learning training into the curriculum to increase students' motivation to learn, which will ultimately have a positive impact on their learning achievement.

i) The adversity quotient has an indirect influence on learning achievement through learning motivation as an intervening variable, as shown by an indirect effect value of 0.135 and a p-value of 0.008. This score shows that these indirect influences are statistically significant, meaning that students' ability to face and overcome difficulties positively affects their learning achievement through increased learning motivation. In addition, a total effect value of 0.331 shows that the adversity quotient has a significant contribution overall to learning achievement, both directly and through learning motivation. These findings support the theory by Stoltz (2000)The adversity quotient is a person's ability to rise and overcome difficulties, which plays an important role in building students' intrinsic motivation. Learning motivation acts as an important mechanism that helps students direct their efforts and stay afloat in the face of challenges in the learning process. Thus, the results of this study confirm the importance of developing students' adversity quotient through educational programs designed to build their resilience and ability to overcome obstacles.

j) Self-efficacy has a positive indirect influence on learning achievement through learning motivation as an intervening variable, as shown by the indirect effect value of 0.082 with a p-value of 0.036, which means that this influence is statistically significant. This suggests that students' confidence in their ability to complete academic tasks contributes to increased learning achievement through increased learning motivation. In addition, a total effect value of 0.261 indicates that overall, self-efficacy makes a moderate contribution to learning achievement, both directly and through learning motivation. These results are consistent with the theory by Bandura (1977), which states that self-efficacy is an individual's belief in the ability to regulate and carry out the actions

necessary to achieve a particular outcome. Learning motivation acts as a mechanism that mediates this relationship by supporting students to stay motivated in the face of challenges and persevere to achieve academic goals. Research by Schunk and Pajares (2002) also supports these findings, which suggest that self-efficacy affects students' motivation, which in turn improves their academic success. The implication of these outcomes is the importance of developing educational intervention programs that focus on improving student self-efficacy, such as providing positive feedback, setting clear goals, and experiential learning. This strategy is expected to increase motivation to learn and ultimately contribute to better learning achievement.

3) Strength of the model

The value of R^2 represents the variance described by each endogenous variable and is a measure that can explain the strength of a model (Hair et al., 2021). A large R^2 value indicates greater explanatory power. This value is between 0 and 1. As a general guideline, the value of R^2 can be divided into three groups, namely high with a value of 0.75, medium with a value of 0.50, and low with a value of 0.25. Next, R^2 value will be presented in Table 9.

Table 9. R^2 Values

	R Square	**Adjusted R Square**
Learning Motivation	0.487	0.472
Learning Achievement	0.645	0.631

From the data in Table 9, it can be seen that the R^2 value of learning motivation is 0.487, which means that learning motivation can be explained by its exogenous variable of 48.7%, which is in the low to medium category. Meanwhile, the adjusted R^2 value of learning motivation means that the magnitude of the influence of self-regulated learning, adversity quotient, self-efficacy, and learning motivation on learning achievement is at a low to moderate level.

4) Predictive power

The next stage is to measure the predictive strength of the model using the help of PLS prediction. The predictive power of the model will be reviewed from the root-mean-square error (RMSE) or mean absolute error (MAE) values of the PLS and Linear models. Shmueli et al. (2019) Guidance in comparing RMSE or MAE values generated by PLS analysis and linear models, namely.

a) If all RMSE or MAE values of all indicators generated by SEM-PLS are lower than those of the linear model (LM) values, then the model has high predictive power.
b) If the majority (or balance) of RMSE or MAE values generated by SEM-PLS is lower than LM, then it indicates that the model has moderate predictive power.
c) If the minority of values generated by the SEM-PLS-bound variable indicator is lower than LM, then the model has low predictive power
d) If SEM-PLS does not produce values lower than LM, then the model has no predictive power.

Table 10 Comparison of RMSE and MAE Scores

	SEM-PLS		LM	
	RMSE	MAE	RMSE	MAE
MOT1	2.289	1.756	2.268	1.704
MOT2	2.991	2.419	2.976	2.365
MOT3	3.326	2.624	3.408	2.746
MOT4	3.376	2.824	3.669	3.098
Y	1.834	1.297	1.895	1.383

Based on Table 10, it can be seen that the majority of RMSE and MAE values produced by the SEM-PLS analysis of endogenous variable indicators are lower than the RMSE and MAE values of LM, which indicates that the model has moderate predictive power.

5) Model fit

Standardized Root Mean Square Residual (SRMR) Yamin & Kurniawan (2011), This value measures the model fit, which represents the difference between the data correlation matrix and the estimated model correlation matrix. Hair et al. (2022) An SRMR score below 0.08 indicates a well-matched model. SRMR scores ranging from 0.08 to 0.10 indicate a satisfactory model match. The model estimation result is 0.077, indicating that the model match meets the criteria (Schermelleh-Engel et al., 2003).

Table 11 SRMR Values

	Model Assessment
SRMR	0,077

CONCLUSION

This study revealed that internal factors such as Self-Regulated Learning, Adversity Quotient, Self-Efficacy, and Learning Motivation significantly affected the academic achievement of grade VIII students at MTs Madani Alauddin. The findings show that each variable has a direct and indirect impact on learning achievement, with learning motivation playing the role of an intervening variable. Self-regulated learning and Adversity Quotient showed the greatest direct influence on learning motivation and academic achievement, while Self-Efficacy had a positive impact despite the smaller contribution. Learning motivation has proven to be the most decisive factor in improving student achievement. In addition, this study emphasizes the importance of integrating independent skills, resilience, self-confidence, and motivational drive in learning strategies to achieve optimal academic outcomes. The research model also showed strong reliability and validity, with the predictive power and fit of the model being at a moderate level. It provides theoretical and practical insights that are essential for the development of more effective education based on the individual needs of students.

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